

Curriculum vitae

1. **Name in Full:** Dr. Javed Iqbal Mirza
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2. Research Interests:

- Genetics
- Plant Biology and Biotechnology

3. Academic Career:

- **Visiting Research Scientist-** Division of Plant and Crop Sciences, School of Biosciences, University of Nottingham, UK, 2009-2010-2011
(Collaborated with several faculty members on developmental and molecular characterization of *Arabidopsis thaliana* mutants isolated in my lab)
- **Visiting Professor-** University of Georgia, USA, 1999-2000
(Genetical and Biochemical Studies of Polyamine and Developmental Mutants of *Arabidopsis*)
- **Post doctorate-** University of Bologna, Italy, 1988-1989
(Polyamine Metabolism in *Arabidopsis* and Screening of Elm Cell Culture Variants Resistant to *Ophiostoma ulmi* Culture Filtrate)
- **PhD-** Department of Genetics, University of Aberdeen, UK, 1978-1983
(Thesis title: The Characterization of Auxin Resistant Mutants of *Arabidopsis thaliana* in Relation to Light and Gravity)
- **MSc after Hons-** Department of Botany, University of Punjab, Pakistan, 1972-1974
(Thesis title: A contribution to our knowledge on freshwater blue-green algae of Lahore)

4. Employment Record

- Visiting Faculty, Department of Botany, Minhaj University, Lahore, 2018 to 2019
- Professor and Head, Department of Biotechnology, University of Sargodha Lahore Campus, Lahore, Pakistan, 05.08.2016 to 20.06.2018
- Professor and Head, Department of Biotechnology, Bahauddin Zakariya University Lahore Campus, Lahore, Pakistan, from 08.09.2015 to 04.08.2016
- Professor and Coordinator of Biotechnology, Institute of Molecular Biology and Biotechnology, The University of Lahore, Pakistan 30.12.2011 to 17.03.2015
- Director, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 31-05-2006 to 23-04-2009
- Professor, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan since 16-09-2000 to 14-10-2009
- Associate Professor, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 22-08-2000 to 15-09-2000

- Visiting Professor (Fulbright Senior Fellowship), Department of Plant Biology, University of Georgia, Athens, GA, USA from 21-08-99 to 21-08-00
- Associate Professor, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 01-01-96 to 20-08-99
- Assistant Professor, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 01-08-89 to 31-12-95
- Postdoctoral Researcher (TWAS Research & Training Award for Research in Italian Laboratories), Department of Botany, University of Bologna, Italy from 12-10-88 to 31-07-89
- Assistant Professor, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 27-03-88 to 11-10-88
- Lecturer, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan, Pakistan from 30-09-84 to 26-03-88
- Demonstrator to Graduate Students/Ph.D. Scholar, Genetics Department, University of Aberdeen, U.K. from 25-09-78 to 26-02-83

5. Services/ Honors/Contributions

- Awarded "Best University Teacher for the Year 2008" by the Higher Education Commission, Pakistan.
- HEC approved supervisor for PhD research: 6 students awarded PhD degree.
- Awarded 8 research projects sponsored by National and International funding agencies.
- Developed research collaboration with Dr. Olaf Czarnecki, KWS SAAT SE (Plant Breeding Company), Germany to identify molecular basis of the phenotypes in Arabidopsis mutant lines Spm 515 & BA 253 isolated in my lab (2016 onward)
- Awarded Fulbright Senior Fellowship for Post-doc at Department of Plant Biology, University of Georgia, Athens, GA, USA, 1999-2000
- Awarded TWAS (Trieste, Italy) Fellowship for Postdoctoral Research and Training in Italian Laboratories at Department of Botany, University of Bologna, Italy, 1988-89
- Collected 16 Arabidopsis and other species of Brassica family from Himalayan region of Pakistan and donated to the Sendai Arabidopsis Seed Stock Centre (SASSC), Miyagi University of Education, Sendai, Japan (2000). The plant collection is now available with Nottingham Arabidopsis Stock Centre (NASC), University of Nottingham, UK.
- As member of "National Curriculum Revision Committee on Biotechnology" contributed in the development of "Curriculum of Biotechnology for BS/MS/MPhil, 2013"
- Compiled Lab Protocols for BS/MSc Biotechnology, Institute of Molecular Biology and Biotechnology, University of Lahore, 2014
- Initiated and signed an MOU between the University of Lahore and University of Nottingham, UK, 2012
- Appointed Professor of Biology (Plant Sciences), Quaid-i-Azam University, Islamabad, Pakistan, 2000

- Examiner for Higher Level Biology, International Baccalaureate (IB) since 2010
- Chairman, Selection Committee (for BPS 1-16), Bahauddin Zakariya University, Multan, Pakistan, 2004-2007
- Coordinator, “27th Pakistan Congress of Zoology (International)” held at Bahauddin Zakariya University, Multan, Pakistan, February 27- March 01, 2007
- Coordinator, National Symposium on “Modern Trends and Approaches in Microbiology” organized by Institute of Pure & Applied Biology, Bahauddin Zakariya University, Multan, Pakistan, January 21, 2009.

6. PhD Students Supervised: The following students have successfully completed their PhD awarded by Bahauddin Zakariya University, Multan:

- 1) Tariq Mahmud Shah (2008). Induction of variability for new plant ideotypes and genetic studies on induced mutations of Chickpea (*Cicer arietinum* L.).

Supervisor: Dr. Javed Iqbal Mirza

Co Supervisor: Dr. Muhammad Ahsan-ul-Haq, NIAB, Faisalabad

- 2) Muhammad Yousaf Saleem (2009). Genetic analysis of Basmati rice (*Oryza sativa* L.).

Supervisor: Dr. Javed Iqbal Mirza

Co Supervisor: Dr. Muhammad Ahsan-ul-Haq, NIAB, Faisalabad

- 3) Muhammad Asif (2010). Genomic analysis for quality traits in cotton (*Gossypium hirsutum* L.) by DNA fingerprinting technology.

Supervisor: Dr. Javed Iqbal Mirza

Co-Supervisor: Dr. Yusaf Zafar, NIBGE, Faisalabad

- 4) Hafiz Muhammad Saeed (2018). Role of glycinebetaine in salinity tolerance of okra (*Abelmoschus esculentus* L.).

Supervisor I: Dr. Javed Iqbal Mirza

Supervisor II: Dr. Muhammad Akbar Anjum, BZU, Multan

- 5) Muhammad Idrees (2018). Effect of potassium humate on growth and yield of potato under agroclimatic conditions of Multan.

Supervisor I: Dr. Javed Iqbal Mirza

Supervisor II: Dr. Muhammad Akbar Anjum, BZU, Multan

- 6) Ashfaq Ahmad Rahi (2019). Growth and yield response of tomato (*Lycopersicon esculentum* L.) crop to potassium humate in combination with micronutrients (Zn, Bo and Fe) under agro-climatic conditions of Multan.

Supervisor I: Dr. Javed Iqbal Mirza

Supervisor II: Dr. Muhammad Akbar Anjum, BZU, Multan

7. Research Projects Completed as PI:

- a) Awarded Research Equipment (valued 9203.00 GBP) for Arabidopsis Research by the German Agency for Technical Cooperation (GTZ) in 1988 (Recommended by Professor A. R. Kranz, Botanical Institute, Johann Wolfgang Goethe University, Frankfurt, Germany)
- b) "Isolation of NAA-resistant mutants of *Arabidopsis thaliana*" (1992-93)
Donor Agency: University Grants Commission, Pakistan.
- c) "Isolation and characterization of polyamine mutants of *Arabidopsis thaliana*" (1992-93)
Donor Agency: The Third World Academy of Sciences (TWAS), Trieste, Italy, Research Grant No. BC 91-031.
- d) "Isolation and characterization of cytokinin mutants of *Arabidopsis thaliana*" (1993-95)
Donor Agency: Pakistan Science Foundation, Project No. P-BZU/Bio (211).
- e) "Induction of genetic variability and selection of mutants for increased production in chickpea (*Cicer arietinum* L.)" (2001-03)
Donor Agency: University Grants Commission, Pakistan.
- f) "Genomic analysis for quality traits in cotton (*Gossypium hirsutum* L.) by DNA fingerprinting technology" (2002-04)
Donor Agency: BZU-University Grants Commission, Pakistan.
- g) "Characterization of some novel developmental mutants of Arabidopsis" (2004-05)
Donor Agency: BZU-Higher Education Commission, Pakistan
- h) "Genetic analysis of Basmati rice (*Oryza sativa* L.)" (2004-06)
Donor Agency: BZU-Higher Education Commission, Pakistan

8. Selected Publications: (Imp. Factor ≈ 51.28)

1. Mirza J.I. and Maher E.P. More 2,4-D resistant mutants. *Arabid. Inf. Serv.*, 17: 103-107, 1980 (Germany)
2. Mirza J.I. and Maher E.P. The effects of light and gravity on roots of normal and ageotropic *Arabidopsis*. *Arabid. Inf. Serv.*, 18: 85-99, 1981 (Germany)
3. Olsen G.M., Mirza J.I. and Maher E.P. The behaviour of ageotropic roots in a gravitropic environment. Poster paper at *Eleventh Int. Conf. on Plant Growth Substances*. Aberystwyth, Wales, 12-16 July, 1982 (UK)
4. Mirza J.I., Olsen G.M., Iversen T-H. and Maher E.P. The growth and gravitropic responses of wild-type and auxin-resistant mutants of *Arabidopsis thaliana*. *Physiol. Plant.* 60: 516-522, 1984 (Denmark)

5. Olsen G.M., Mirza J.I., Maher E.P. and Iversen T-H. Ultrastructure and movements of cell organelles in the root cap of agravitropic mutants and normal seedlings of *Arabidopsis thaliana*. *Physiol. Plant.*, 60: 523-531, 1984 (Denmark)
6. Mirza J.I. and Maher E.P. The characterization of an auxin resistant dwarf mutant of *Arabidopsis thaliana*. *Arabid. Inf. Serv.*, 22: 23-33, 1985 (Germany)
7. Mirza J.I. and Maher E.P. The seed coat retention at the root- hypocotyl transition zone in *Arabidopsis thaliana*. *Arabid. Inf. Serv.*, 22: 35-41, 1985 (Germany)
8. Mirza J.I. and Maher E.P. Studies of an auxin-resistant mutant of *Arabidopsis thaliana*. *J. Res. Sci.* 1: 1-12, 1986
9. Mirza J. I. Spiral growth of hypocotyles in mutant *aux-1* of *Arabidopsis thaliana*. *Arabid. Inf. Serv.*, 23: 62-65, 1987 (Germany)
10. Mirza J.I. The effects of 2.4-D on the rosette development of mutant *Dwf* and Wild-type of *Arabidopsis thaliana*. *Arabid. Inf. Serv.*, 23: 59-61, 1987 (Germany)
11. Mirza J.I. and Maher E.P. Physiological characteristics of two auxin resistant mutants of *Arabidopsis thaliana*, *aux2* and *Dwf*. *Plant Growth Regul.* 5: 41-49, 1987 (The Netherlands)
12. Mirza J.I. Seed coat retention and hypocotyl hook development in mutants of *Arabidopsis thaliana* L. *Ann. Bot.*, 59: 35-40, 1987, (UK)
13. Mirza J.I. The effects of light and gravity on the horizontal curvature of roots of gravitropic and agravitropic *Arabidopsis thaliana* L. *Plant Physiol.*, 83: 118-120, 1987 (USA)
14. Mirza J.I. The clinostat effect on the direction of root growth of WT and *aux-1* of *Arabidopsis*. *Arabid. Inf. Serv.*, 26: 35-38, 1988 (Germany)
15. Mirza J.I. Spirally twisted growth of *Arabidopsis* roots. *Arabid. Inf. Serv.*, 26: 97-99, 1988 (Germany)
16. Mirza J.I., Khalid M. and Javed M.H. Comparative study of nitrogen fixation by some blue-green algae of Multan. *Pak. J. Bot.* 21: 339-342, 1989 (Pakistan)
17. Biondi S., Mirza J.I., Mittempergher L., and Bagni N. Selection of Elm cell culture variants resistant to *Ophiostoma ulmi* culture filtrate. *J. Plant Physiol.* 137: 631-634, 1991 (Germany)
18. Mirza J.I. and Bagni N. Effects of exogenous polyamines and difluoromethylornithine on seed germination and root growth of *Arabidopsis thaliana*. *Plant Growth Regul.* 10: 163-168, 1991 (The Netherlands)
19. Mirza J.I. *Arabidopsis* research in Pakistan. *For Thale or Went*. The Sixth AFRC PMB Arabidopsis Newsletter P. 21, July 1991 (UK)
20. Mirza J.I. Polyamines and *Arabidopsis*. *A-rap-a-bop-sis*. The Seventh AFRC PMB Arabidopsis Newsletter, P. 21, November 1991, (UK)
21. Mirza J.I. and Tariq R. Effects of sodium chloride on growth and nodulation of *Sesbania sesban*. *Pak. J. Bot.* 24: 209-212, 1992
22. Mirza J.I. Plant hormone mutants in Arabidopsis. *Aravederci*, The Ninth AFRC PMC Arabidopsis Newsletter, p.22, November 1992 (UK)
23. Mirza J.I. Rasheed S. and Bokhari M.H. Effects of inoculation methods

- on the growth and nodulation of two soybean cultivars. *Intern. J. Trop. Agric.* 10: 168-171, 1992 (India)
24. Mirza J.I. and Tariq R. Effect of salinity on growth, seed yield and nodulation of *Cicer arietinum*. *Pak. J. Bot.* 25: 47-50, 1993
 25. Mirza J.I. and Tariq R. The growth and nodulation of *Trifolium alexandrinum* as affected by salinity. *Biol. Plant.* 35: 289-292, 1993 (Czech Public)
 26. Mirza J.I. Development and sedimentation of amyloplasts in relation to the hypocotyl hook in long melon seedlings. *J. Res. Sci.* 7: 1-4, 1995
 27. Mirza J.I. and Bokhari M.H. Fruits and Vegetables of Pakistan. Ferozsons (Pvt.) Ltd. Lahore, pp. 66, 1996, (Book) ISBN 969 0 01275 4,
 28. Mirza J.I. Plant hormone mutants of *Arabidopsis thaliana*, *Pak. J. Bot.* 28: 41-49, 1996
 29. Mirza J.I. Amyloplast development and movement in relation to the hypocotyls hook in mungbean seedlings. *Pak. J. Pl. Sci.* 2: 1-9, 1996
 30. Mirza J.I. and Iqbal M. Spermine-resistant mutants of *Arabidopsis thaliana* with developmental abnormalities. *Plant Growth Regul.* 22: 151-156, 1997 (The Netherlands)
 31. Mirza J.I. and Saeed H.M. A mutation at *AP2* locus of *Arabidopsis* confers spermine resistance. *Biol. Plant.* 40: 67-73, 1997 (Czech Republic)
 32. Mirza J.I. and Rehman A. A spermine-resistant mutant of *Arabidopsis thaliana* displays precocious germination. *Acta Physiol. Plant.* 20: 235-240, 1998 (Poland)
 33. Mirza J.I., Li C., Yu W., Emory K.K. and Malmberg R.L. Polyamine metabolism and hormone resistant mutants of *Arabidopsis thaliana*. Paper presentation at the "Annual Conference at Unicoi ", Georgia, organized by the University of Georgia Plant Center, USA, May 15-16, 2000
 34. Mirza J.I., Galau G.A. and Malmberg R.L. Studies with a viviparous mutant of *Arabidopsis thaliana*, *spr2*. Poster Presentation (Abstract No.224) at the "11th International Conference on Arabidopsis Research", University of Wisconsin, Madison, WI, USA, June 24-28, 2000
 35. Mirza J.I., Li C., Yu W., Emory K.K. and Malmberg R.L. Hormone-resistant and polyamine metabolism mutants of *Arabidopsis thaliana*. Poster Presentation (Abstract No.225) at the "11th International Conference on Arabidopsis Research", University of Wisconsin, Madison, WI, USA, June 24-28, 2000
 36. Mirza J.I., Saeed H.M. and Ghaffar A. Novel polyamine mutants of *Arabidopsis thaliana*. *Pak. J. Pl. Sci.* 7: 1-9, 2001
 37. Elahi N.N., Akhtar W., Mirza J.I. Effect of combined nitrogen on growth and nodulation of two mungbean (*Vigna radiata* [L.] Wilczek) cultivars. *J. Res. (Sci.)*, 15(1): 67-72, 2004
 38. Elahi N.N., Mustafa S. and Mirza J.I. Growth and nodulation of mung bean (*Vigna radiata* [L.] Wilczek) as affected by sodium chloride. *J. Res. (Sci.)*, (2): 139-143, 2004
 39. Noreen S., Elahi N.N. and Mirza J.I. Assimilation of nitrogen by soybean grown at different nitrate-nitrogen levels. *J. Res. (Sci.)*, 15(3): 239-244, 2004
 40. Mirza J.I. Novel developmental mutants of *Arabidopsis thaliana*. Abstract # T01-086, International Conference on Arabidopsis Research, Berlin, July 11th

- to 14th, 2004 (Germany)
41. Shah T.M., Mirza J.I., Haq M.A., Atta B.M. Induced genetic variability in chickpea (*Cicer arietinum* L.) I. Frequency and Spectrum of Chlorophyll mutations. *Pak. J. Bot.* 38(4): 1217-1226, 2006
 42. Shah T.M., Mirza J.I., Haq M.A. and Atta B.M. Induced genetic variability in chickpea (*Cicer arietinum* L.) II. Comparative mutagenic effectiveness and efficiency of physical and chemical mutagens. *Pak. J. Bot.* 40(2): 605-613, 2008
 43. Asif M., Rahman M., Mirza J.I. and Zafar Y. High resolution Metaphore agarose gel electrophoresis for genotyping with microsatellite markers. *Pak. J. Agri. Sci.* 45 (1): 75-79, 2008
 44. Saleem M.Y., Mirza J.I. and Haq M.A. Heritability, genetic advance and heterosis in line x testser crosses of Basmati rice. *J. Agric. Res.* 46(1): 15-26, 2008
 45. Asif M., Mirza J.I. and Zafar Y. Genetic analysis for fiber quality traits of some cotton genotypes. *Pak. J. Bot.* 40(3): 1209-1215, 2008
 46. Shah T.M., Mirza J.I., Haq M.A. and Atta B.M. Radio sensitivity of various chickpea genotypes in M₁ generation I- Laboratory studies. *Pak. J. Bot.* (2): 649-665, 2008
 47. Shah T.M., Atta B.M., Mirza J.I. and Haq M.A. Screening of chickpea (*Cicer arietinum*) induced mutants against Fusarium wilt. *Pak. J. Bot.*, 41(4): 1945-1955, 2009
 48. Saleem M.Y., Mirza J.I. and Haq M.A. Triple test cross analysis of some physio-morphological traits in Basmati rice. *Pak. J. Bot.* 41(5): 2411-2418, 2009
 49. Asif M., Rahman M., Mirza J.I. and Zafar Y. Parentage confirmation of cotton hybrids using molecular markers. *Pak. J. Bot.* 41: 695-701, 2009
 50. Saleem M.Y., Mirza J.I. and Haq M.A. Combining ability analysis of yield and yield related traits in Basmati rice (*Oryza sativa* L.). *Pak. J. Bot.* 42(1): 627- 637, 2010
 51. Saleem M.Y., Mirza J.I. and Haq M.A. Genetic basis of yield and some yield related traits in Basmati rice. *Pak. J. Bot.* 42(2): 955-961, 2010
 52. Saleem M.Y., Mirza J.I. and Haq M.A. Combining ability analysis of some morpho-physiological traits in Basmati rice. *Pak. J. Bot.* 42(5): 3113-3123, 2010
 53. Shah T.M., Atta B.M., Mirza J.I. and Haq M.A. Induced genetic variability in chickpea (*Cicer arietinum* L.) III. Frequency of morphological mutations. *Pak. J. Bot.* 43(4): 2039-2043, 2011
 54. Mirza J.I., Bassel G.W., Qazi M.H. and Holdsworth M.J. A viviparous mutant of *Arabidopsis thaliana* displays desiccation tolerance and impaired seed coat development. Paper presentation (abstract p. 34), The "SAARC Regional Conference, New Frontiers in Agricultural Genomics & Biotechnology", Islamabad, Pakistan, June 5-7, 2012
 55. Shah T.M., Atta B.M., Mirza J.I. and Haq M.A. Radio sensitivity of various chickpea genotypes in M₁ generation II- Field studies. *Pak. J. Bot.* 44 (2): 631-634, 2012
 56. Mirza J.I., Khan A.W.A., Khan D.M. and Khan N.F. Novel mutants of *Arabidopsis thaliana* affected in hormone response and developmental traits of agricultural importance. Poster presentation (abstract p. 77), "International Conference on Biotechnology: Prospects and Challenges in

Agriculture, Industry, Health and Environment". Faisalabad, Pakistan, April 22-26, 2013

57. Khan M.F.S., Yaqoob K., Bajwa M.J., Mujahid S., Aman S. and Mirza J.I. Preliminary studies on internal control genes in wild type and some mutants of *Arabidopsis thaliana*. Poster presentation, "International Conference of Plant Sciences", Lahore, Pakistan, September 22-24, 2014
58. Rahi, A.A., Anjum, M.A. and Mirza, J.I. Integrated impact of micronutrients and potassium humate applications on growth, yield and fruit quality of tomato. *Soil Environ.* 35(2): 187-193, 2016
59. Saeed, H.M., Mirza, J.I. and Anjum, M.A. Glycinebetaine-induced modulation in some biochemical and physiological attributes of okra under salt stress. *Pak. J. Bot.*, 48(6): 2205-2210, 2016
60. Idrees, M., Anjum, M.A., and Mirza, J.I. Potassium humate and NPK application rates influence yield and economic performance of potato crops grown in clayey loam soils. *Soil Environ.* 37(1): 53-61, 2018